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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,304	08/06/2001	Yutaka Yamagata	107734	5220
25944	7590	11/14/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			GORDON, BRIAN R	
			ART UNIT	PAPER NUMBER
			1743	
DATE MAILED: 11/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/674,304	<b>Applicant(s)</b> YAMAGATA ET AL.	
	<b>Examiner</b> Brian R. Gordon	<b>Art Unit</b> 1743	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9-29-05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-31-00 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 29, 2005 has been entered.

### ***Response to Arguments***

1. Applicant's arguments, see remarks, filed September 29, 2005, with respect to the rejection(s) of claim(s) 7, 8, 10 under 112 first and second paragraph, 102, and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Moore et al. US 5,866,825.

The previous objection to the figure 1, is withdrawn.

### ***Drawings***

2. The drawings were received on September 29, 2005. These drawings are acceptable.

### ***Claim Interpretations***

3. It should be noted that "a desired liquid level" is just that any selected area which one chooses at any time. The desired liquid level is not a structural limitation of the

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device but is reference in the claim to provide a relative location of the elements. Based on applicant figures, the storage vessel and discharging vessel are not just connected but are basically formed in one contiguous block, monolithic structure. The claim merely requires the elements to be connected as such two separate containers connected as described would also meet the limitation of the claim. The figures also suggest the discharge tube is mounted above the discharging vessel so that the discharge inlet opens therein in a configuration where the cross section of the inlet is planar with the desired liquid level in the discharging vessel. The claims however do not suggest such an arrangement. The claim does not preclude the tube from being mounted and opening on side of the discharging vessel nor a configuration in which the tube protrudes upward through the bottom of the discharging vessel and tube opens at the desired liquid level allowing liquid to flow over an into the tube.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 10, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 1 and 10 recites the limitation "the desired level of liquid to be injected into the storage vessel" in line 2. There is insufficient antecedent basis for this limitation in the claims. The claim previously mentions "a desired liquid level" in relationship to a flow path. However, it is not recited that "a desired liquid level" is the same as "the

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desired liquid level of the liquid to be injected into the storage vessel. It is not clear nor required that a single liquid level be the same for the storage vessel and discharging vessel.

Both liquid supplying/discharging means are defined as such and while both have their respective functions is unclear how each performs as such without being connected to the respective injection and discharging tubes.

As to claim 12, is unclear what is meant by "integrally formed at a single base material" it appears as if "at" should be "in" or "of".

While the examiner suggest the following claim language to address the above comments directed to claims 1 and 10. It should be noted that examiner is not stating such a claim would be allowable over the prior art, but would be considered to address the comments above.

A liquid treating equipment comprising:

a storage vessel storing a liquid and having a desired liquid level ~~to store a liquid~~;

an injection tube to inject the liquid into the storage vessel;

a liquid supplying means connected to the injection tube to supply the liquid into the storage vessel through the injection tube;

a discharging vessel having a desired liquid level and connected to the storage vessel via a flow path, wherein the desired liquid levels of said storage vessel and said discharging vessel are equal and the flow path is at a lower depth than said desired liquid level, and wherein the discharge vessel and storage vessel are horizontally disposed to each other;

a discharge tube including a discharge inlet mounted above the discharging vessel so that a discharge inlet opens therein in a configuration where a cross section of the inlet is planar with a desired liquid level in the discharging vessel;

~~a discharge tube of which a discharging inlet is positioned at the same level position as the desired liquid level of the liquid to be injected into the storage vessel;~~ and

a liquid discharging means connected to the discharge tube to discharge the liquid from the discharging vessel through the discharge tube, wherein operation of said liquid discharge means maintains the desired liquid liquid level.

If applicant chooses to accept the suggest language, applicant is advised to review the dependent claims to ensure no further amendments would be required in view of the new amended language.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

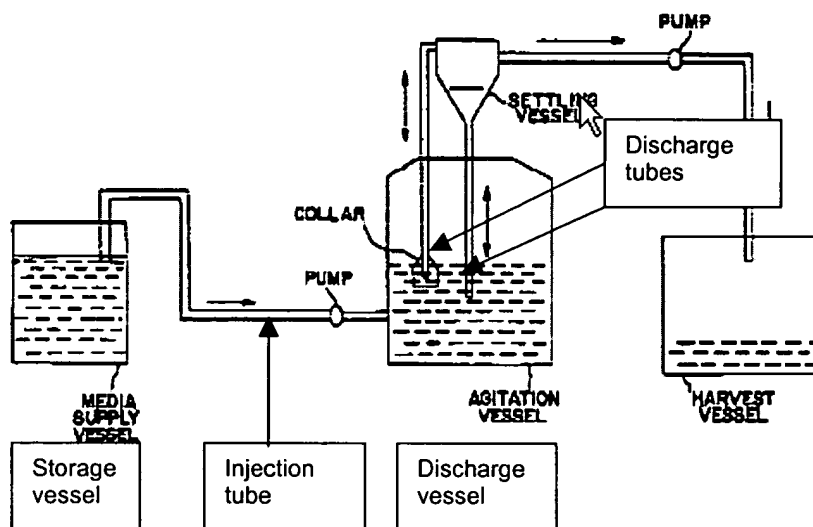
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 6-11, 15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Barngrover et al. US 5,733,776.

Barngrover discloses all of the elements of the claim. As stated above “a desired liquid level” is not a structural limitation and can be any level chosen at anytime by an

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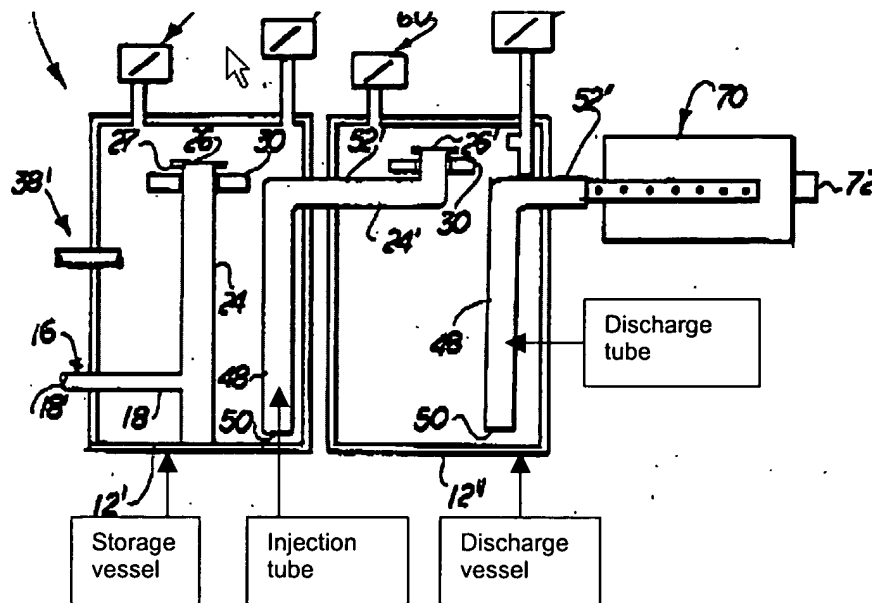
operator. As such, the following is considered meet the claims as labeled. The respective pumps function to supply and discharge the liquid.



9. Claims 1, 6-11, 15 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall, US 4,915,823.

Barngrover discloses all of the elements of the claim. As stated above "a desired liquid level" is not a structural limitation and can be any level chosen at anytime by an operator. As such, the following is considered meet the claims as labeled. A delivery system supplies the liquid to tank 12' and a removal system (suction pump 70) removes the fluid from tank 12".

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### Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.



12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barngrover et al. US 5,733,776.

As to claim 3, it can be seen in the Figure above, that while not specifically stated, the total surface area of the agitation vessel appears to be much larger than that of the storage vessel.

As to claim 4, the discharge vessel of the device as labeled above takes on the form of a denary.

As to claim 5, making the depth of the agitation vessel be less than that of the storage vessel is a design choice, which would have been obvious to one of ordinary skill in the art to choose to make the vessel wider rather than taller but allowing for the same volume therein.

14. Claims 16 -18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barngrover et al. US 5,733,776 as applied to claim 15 above, and further in view of Rose et al. US 6,551,557.

Barngrover et al. do not disclose the device liquid and discharge means comprising rotary or positive displacement pumps.

While both pump-types are conventionally known, Rose discloses a liquid supply/dispensing system comprising a pump. The pump 22 is preferably a high-resolution, positive displacement syringe pump hydraulically coupled to the dispenser 12. Alternatively, pump 22 may be any one of several varieties of commercially available pumping devices for metering precise quantities of liquid. A syringe-type pump 22, as shown in FIG. 7, is preferred because of its convenience and commercial availability. A wide variety of other direct current fluid source means may be used, however, to achieve the benefits and advantages as disclosed herein. These may include, without limitation, rotary pumps, peristaltic pumps, squash-plate pumps, and the like, or an electronically regulated fluid current source. As the lead screw portion 68 of the plunger shaft 66 is rotated the plunger 64 will be displaced axially, forcing system fluid from the syringe housing 62 into the exit tube 70. Any number of suitable motors or mechanical actuators may be used to drive the lead screw 68. Preferably, a stepper motor 26 (FIG. 7) or other incremental or continuous actuator device is used so that the amount and/or flow rate of fluid or reagent can be precisely regulated.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a rotary or syringe-type pump assembly as taught by Rose et al. for the assemblies are readily available and provide for precise regulation to the fluid flow.

***Allowable Subject Matter***

15. Claim 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach nor fairly suggest the storage vessel, the flow path and the discharge vessel are hydrophilic treated in an integrally formed material.

***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Gore; Douglas J.; Robinson; Larry P. et al.; Tittlebaum; Marty E. et al.; Zuk, Jr.; Peter; Khudenko; Boris M.; Doelle; Klaus et al.; Putz; Leo et al.; Lord; Yves; Harris; Ronald B.; McKinney; Jerry; Pank; Thomas E.; Stegall, Sr.; William A. et al.; Daniels; Byron Charles; Felder; Anton et al.; Szereday; Pal et al.; Strand; William L.; Verret; Allen J.; Dickerson; J. Rodney; DeMichael; John; Aoyagi; Keichi; Ryan; Leo; van Kuijeren; Herman C.; and McKim; Matthew P. et al. disclose liquid treatment devices.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'E. J. M.', is written above the initials 'brg'.

brg